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DENTAL STUDIES OFFICE REPORT #81-013

EVALUATION OF THE EFFECTIVENESS AND EFFICIENCY
OF PREVENTIVE DENTISTRY PROGRAMS:

Assessment of the Relationship Between Past Dental
Experience and Dental Sick Call in the Field.

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Assistant Surgeon General for Dental Services
Department of the Army

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It was recommended that a) results of this study be made available to personnel responsible for developing field dental resources and to personnel responsible for evaluating the AOHMP; b) the AOHMP should be continued and improved upon as an effective means of conserving the fighting strength; and c) further studies should be conducted to evaluate the total dental disease, nonbattle dental injury, and battle-related conditions for a theater of operations.

SUMMARY

The relationship between dental sick call during Army field training exercises and prior dental experience of Army personnel was examined by analyzing data on 92 soldiers who reported to field support dental facilities for emergency conditions and data on 97 randomly selected soldiers who participated in the same exercises but did not report for dental emergencies in the field. Approximately 7745 Troops from 3 different units participated over a time period of 117 days in 3 separate field exercises.

The findings indicate an annual dental sick call rate of 234 per 1,000 soldiers. Caries was the most frequent cause of the emergencies (41.2%) followed by third molar/pericoronitis (15.9%), defective filling or fractured tooth (11.0%), gingival and periodontal problems (9.3%), and trauma (2.7%). The most frequent primary treatment rendered in the exercises was extraction (20.9% of primary treatment). When considering all treatment, prescription of medications was the most frequent (35.4%). Eighty-four percent (84%) of the patients were returned to duty without further evacuation. The finding most pertinent to the purpose of this study was that significantly more of the control group had completed the requirements of their last Army Oral Health Maintenance Program (AOHMP). That is, they were given a dental examination during their last birthmonth. The sick call group completed AOHMP requirements in 29.2% of the cases compared to 45.4% for the control.

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1. INTRODUCTION.

a. Problem. The Army Oral Health Maintenance Program (AOHMP), a major preventive dentistry program, mandates that every active duty Army member participate annually by reporting for a dental examination on the anniversary of his/her birthmonth. Following this examination, each participant is offered the opportunity to receive the preventive and corrective care necessary. The program, as currently operating, has not been evaluated to determine its effectiveness in reducing the incidence of sick call and/or "dental emergencies" when soldiers are assigned to the field. An assessment of the effectiveness of the AOHMP as a preventive program is necessary for determining the most efficient use of dental resources to provide a dentally-fit soldier.

b. Purpose. The overall purpose of this study is to determine the relationship between soldiers reporting for dental sick call during field training and their past dental experience in the garrison environment.

c. Background. One of the major preventive dentistry program efforts, known as the Army Oral Health Maintenance Program (AOHMP), was initiated in 1968.¹ Phase I of this program was aimed at those active duty personnel who were 25 years of age or younger. Phase I was essentially an intensive preventive education and self-applied fluoride effort conducted on entry into service and at six-month intervals thereafter for the younger caries-prone age group of Army personnel. In 1971, the program was broadened to include the active duty personnel over age 25. Known as Phase II,² this clinic-based program was aimed at primary prevention and early detection, as well as treatment of oral disease. The program continued as a two-phase effort until 1974 when the phases were integrated.^{3,4} Since that time, it has functioned as a single program whose purpose is to promote prevention and provide primary, secondary, and tertiary levels of dental care and thus produce a dentally-fit soldier. The AOHMP also serves as the primary vehicle for entry of active duty personnel into the Army Dental Care System. An evaluation of the AOHMP, which was completed in June 1970,^{5,6} identified the effectiveness of the operational aspect of the program and measured the change in oral health status of program participants. At the time this study was conducted, and currently, the only program evaluation criterion was concentrated on having 80 percent of the eligibles report for their annual examinations. The 1979 study indicated that less than 50 percent of the eligible beneficiaries received an annual examination as a direct result of the AOHMP. This is in contrast to reports received from the field which frequently showed participation rates that far exceeded the 80 percent acceptability limit placed by HSC. The study further indicated that only approximately 13 percent of the eligible population receive annual exams on a recurring basis. However, for those beneficiaries who actually entered the treatment phase as a result of AOHMP the case completion rate was more than 60 percent. The facts, although of value in evaluating program operation, do not answer the question of how the AOHMP reduces time lost due to "dental emergencies" in the field environment. Soldiers with combat Military Occupational Specialties (MOS) had greater dental needs than non-combat MOS soldiers, and lower-ranking soldiers required more care than higher-ranking enlisted personnel and officers. Thus, the types of soldiers who engage in extensive field training are the types which have the highest needs according to the 1979 study. During the study period (four months) the combat MOS soldiers' mean number of appointments received was less

than the mean for non-combat MOS soldiers. There has not been an evaluation of dental noneffectiveness which includes a retrospective analysis of past dental experience of sick call participants in the AOHMP or other preventive programs.

d. Previous studies and literature review. In addition to a review of dental and medical literature, the following documents/sources also were utilized: 1) Defense Documentation Center for Scientific and Technical Information (DDC); 2) Defense Logistics Studies Information Exchange (DLSIE); and 3) The Army Study Program (TASP). Sumnicht⁶ reported that during a 1964 field exercise the dental emergency or near-emergency rate was 152 per 1,000 soldiers per year. Forty-seven percent of the conditions treated were caries related, while only approximately four percent were due to trauma associated with the exercise. In 1968, the Dental Combat Effectiveness Program (DCEP) was initiated as an effort to reduce the dental noneffectiveness rate among combat soldiers in Vietnam. The program was designed to screen combat MOS Vietnam-bound personnel and provide interceptive care for potential dental emergency conditions. Cassidy⁷ reported that as a result of the DCEP the annual dental emergency rate of 143 per 1,000 was reduced by half. In a more recent (1978) field exercise, Payne and Posey⁸ determined that the annual incidence rate of dental emergencies was 167.4 per 1,000 personnel per year. The authors reported that 52 percent of the conditions were caries related, and an additional 22 percent were gingival conditions. These studies show that dentally-related noneffectiveness during combat and field exercises continues to be a problem of practical significance. The relationship between participation in an active preventive-oriented program (AOHMP) and the incidence of a potentially preventable condition's becoming acute in the field has not been formally studied and reported.

2. OBJECTIVES.

The specific objectives of the study are:

- a) To determine the rate and nature of dental sick call during extended field training.
- b) To determine the dental care patterns of soldiers who were among the sick call identified in the first objective (a) above.
- c) To determine if the past dental care experience of sick call participants differs from that of non-sick call participants.

3. METHODOLOGY.

a. Data Collection.

(1) This study utilized prospective data collected from units participating in field training exercises at the National Training Center, Fort Irwin, CA, as well as retrospective data collected from dental records of personnel assigned to units participating in training exercises and this study. The population studied consisted of active duty US Army units from Fort Stewart, GA, Fort Hood, TX, and Fort Ord, CA undergoing training from October 1980 through April 1981 on three separate field exercises. The

prospective data, collected on individuals reporting for dental sick call, were reported on the Dental Sick Call Reporting Form found at Appendix A. The form was completed by the attending dental officer. Both the Fort Irwin Dental Activity (DENTAC) and dental units assigned to directly support the units in training collected and submitted the data. The data collected at this level were brief but consisted of sufficient information to identify the individual and unit of assignment. This information was used to locate the dental records at the DENTAC responsible for providing dental care at a unit's home installation. In addition, clinical information was recorded, to include: complaint or reason for reporting to dental sick call; treatment rendered; disposition; and assessment of legitimacy of the sick call visit. The Fort Irwin DENTAC Commander served as the study coordinator and supervised the data collection effort to insure accuracy and completeness of reported information. The data collection mechanism for this study also provided a procedure log for the unit dental officer(s) and/or the DENTAC for the total workload generated. Following the training period, the data collection forms were collected and forwarded to Dental Studies Office (DSO), Directorate of Combat Developments and Health Care Studies (DCDHCS), Academy of Health Sciences (AHS), US Army by the Fort Irwin, CA DENTAC Commander.

(2) Following the return and review of the data to DSO, AHS, project personnel visited the DENTAC responsible for the unit's care and retrieved pertinent care data from the Standard Form 603 in the patients' dental health records. This process permitted the development of a dental history profile. A sample of the data collection form may be found at Appendix B. In addition to this follow-up of sick call participants, a random sample of dental records for non-sick call field exercise participants was examined, and a similar dental history profile was developed for this group. All data collection of retrospective data was accomplished by DSO and Health Care Studies Division (HCSD), DCDHCS, AHS personnel.

b. Analysis of Data.

(1) The sick call data for each unit were analyzed by the use of descriptive statistics which describe the frequency of occurrence of various clinical categories of sick call and the subsequent treatment rendered.

(2) Data handling procedures were accomplished by DSO/HCSD personnel prior to transfer of data to punched cards by the Production Division, Health Care Systems Support Activity (HSSCA), US Army Health Services Command (HSC), located in Bldg 2,000, Fort Sam Houston, TX 78234. Programming support and statistical consultation were obtained from HCSD personnel. The preprogrammed Statistical Package for the Social Sciences (SPSS) was used for all analysis procedures. The Operations Analysis Office (OAO), DCDHCS, AHS, furnished support using its on-line terminal connected to the Training and Doctrine Command's computer system at Fort Leavenworth, KS.

(3) Past dental experience data for sick call participants and non-participants were evaluated using descriptive statistics and further analyzed using the SPSS to calculate Chi-square and F tests of significance to determine differences between groups.

4. FINDINGS.

a. Prospective Data from Field Dental Sick Call.

(1) Sample Characteristics. One hundred eighty-two (182) dental sick call visits were reported from the total of 7,745 supported troops on three separate field exercises and 117 days of training. The rank distribution for the sick call group is shown in Table 1.

(2) Rate of Sick Call. The rate varied among the three units studied. Using weighting based on the proportion of sick call for each unit, the weighted average for the sick call rates of all three exercises was 234 per 1,000 troops per year. Table 2 summarizes sick call numbers and rates.

(3) Nature of Sick Call. The distribution of dental conditions which caused the sick call visit demonstrates that dental caries predominated as the condition most frequently needing care. Nineteen and two-tenths (19.2) percent of the visits were for conditions which were follow-ups on earlier treatment given in the field or for conditions which could not be clearly classified. Table 3 shows the distribution of causal conditions.

(4) Treatment. Prescription of medications was the most frequently reported form of treatment overall. When we consider only those treatments which were the most definitive (primary treatment), however, extraction was the most common. Table 4 shows the frequency of treatment categories.

(5) Disposition. After dental treatment in the field, the majority of patients (69.2%) was returned to duty with no further appointment to be seen again in the field. Table 5 shows the disposition of the patients after treatment.

b. Retrospective Data from Dental Record Audit.

(1) Sample Characteristics. Dental records were audited for the 92 field sick call patients and 97 individuals randomly selected from troops who participated in the field exercises but who did not report for sick call in the field. The randomly selected group served as the control group for comparisons with the troops who reported on dental sick call. Table 6 shows the distribution of the sick call group and the control group by rank and by sex.

(2) The responses given by the sick call group and the control group on each item of the data collection form were compared using the Chi-square test of significance (.05 significance level) and/or the F-test of significance (.05 significance level), where appropriate. Most items showed no statistically significant difference between the groups and are reported in Table 7, Table 8, and Table 9. The numbers were combined into a "Both" column on all three tables to serve as a summary of the dental history of the troops who were on the field exercises at Fort Irwin.

(3) Significantly more of the control group had been seen for examination since reception station. The difference between the 92 (94.8%) soldiers in the control group and the 76 (82.6%) in the sick call group who had been seen for examination since reception station is statistically significant at the .0145 significance level (Chi-square = 5.973 with 1 degree of freedom).

(4) Significantly more of the control group had been seen for treatment since the reception station. The difference between the 83 (85.6%) soldiers in the control group and the 62 (67.4%) in the sick call group who had been seen for treatment since reception station is statistically significant at the .0054 significance level (Chi-square = 7.745 with 1 degree of freedom).

(5) There was a significant difference between the control group and the sick call group in regard to their participation in the Army Oral Health Maintenance Program. The sick call group less frequently completed the requirements of the AOHMP. Table 10 presents the distribution and significance of the difference.

5. DISCUSSION.

a. Prospective Data from Field Dental Sick Call.

(1) The rate of 234 sick call visits per 1,000 troops per year determined by the present study is higher than those reported by Sumnicht⁶ (152 per 1,000 per year), Cassidy⁷ (143 per 1,000 per year), or Payne and Posey⁸ (167.4 per 1,000 per year). The reason for the higher rate is not apparent from inspection of the data. The investigators can only speculate that differences in availability of care during and before the exercise, duration of the exercise, and/or nature of the operations affected the rate. It is also possible to speculate that the higher rate may reflect an increase in dental disease in troops compared to previous time periods in which the other studies were conducted.

(2) The goals of this study did not include a dental workload estimate; however, Table 3, Table 4, and Table 5 describe the categories of dental conditions which presented, the treatments which were rendered, and the disposition of the patients. This information, although intended to reveal the nature of the sick call, could serve as a contribution to the data base needed to make an estimate of dental emergency workload and resources required to meet the dental emergency workload in a theater of military operations.

b. Retrospective Data From Dental Record Audit.

(1) Soldiers who reported on sick call with dental complaints and those who did not report on sick call for dental complaints appear from this study to be very similar in regard to their dental experience in the garrison environment. The bias of the investigators based upon clinical experience would have predicted more differences than were observed. For example, it could have been hypothesized: that the sick call group would have had a higher rate of broken or failed appointments; that the sick call group would have been higher in emergencies as the nature of the last visit; and that the sick call group would have been higher in oral surgery treatment over the past two years. As can be observed from Table 7, Table 8, and Table 9, this is not the case.

(2) The significant difference observed between the sick call group and the control group for examination and treatment since reception station was as predicted. The control group more frequently had examinations and treatment since reception station.

(3) The important finding of the study was that the sick call group had less participation in the last Army Oral Health Maintenance Program. Only 29.3% of the sick call group completed this annual requirement compared to 45.5% of the control group. The implication of this finding is that the AOHMP has an impact on the frequency of sick call visits during field training exercises. If field training exercises are simulations of operations in a theater of combat operations it is reasonable to assume that participation in the AOHNP will have a positive effect on combat effectiveness.

(4) Although the findings seem to demonstrate success in reducing combat noneffectiveness, they do not address the questions of how effective the AOHMP is, or how cost effective it is. The AOHMP should continue to be monitored and modified to improve effectiveness and cost-effectiveness.

6. CONCLUSIONS.

a. The incidence of dental emergencies in a field training exercise can be accurately measured using methodology similar to what was used in this study.

b. The incidence of dental emergencies on these three field training exercises at Fort Irwin, California was higher than was predicted by previous studies.

c. There is a positive relationship between participation in the Army Oral Health Maintenance Program and lower rate of dental emergencies during field training.

7. RECOMMENDATIONS.

a. Results of this study be made available to personnel responsible for developing field dental resources and to personnel responsible for evaluating the Army Oral Health Maintenance Program.

b. The Army Oral Health Maintenance Program should be continued and improved upon as an effective means of conserving the fighting strength.

c. Further studies should be conducted to evaluate the total dental disease, nonbattle dental injury, and battle related dental conditions for a theater of operations.

REFERENCES

1. Memorandum For All Dental Corps Officers, MEDDS-PD, 6 December 1968, Subject. Oral Health Maintenance Program.
2. Letter, AGDA-M (11 January 1971) MEDDS-P, 20 January 1971, Subject: Phase II Army Oral Health Maintenance Program.
3. Letter, DAAG-PAP-A(M) (DASG-DCM) 4 October 1974, Subject: Army Oral Health Maintenance Program.
4. HSC Dental Bulletin Number 2, 18 February 1975, Phase II Army Oral Health Maintenance Program.
5. Effect of the Army Oral Health Maintenance Program on the Dental Health Status of Army Personnel - Executive Summary. Report HCSD #79-004-D. Health Care Studies Division, Academy of Health Sciences, US Army.
6. Sumnicht, Russell W. "Report of Studies Related to the Army Preventive Dentistry Program." Symposium - Applied Preventive Dentistry, 2nd Ed. The Curators, University of Missouri, Columbia, 1965, pp 18-33.
7. Cassidy, J.E. "The Problem is Elephants." Journal of the American Society of Preventive Dentistry, October 1970, p 7.
8. Payne, T.F., and Posey, W.R. "Analysis of Dental Casualties in Prolonged Field Training Exercises." US Army Institute of Dental Research, Washington, DC, 1979.

TABLES

TABLE 1
RANK DISTRIBUTION OF SICK CALL FROM FIELD
EXERCISES AT FORT IRWIN, CA 1981

Rank Group	Number	Percent
E1 - E3	48	52.2
E4 - E5	24	26.1
E6 - E7	10	10.9
E8 - E9	0	0.0
WO1 - WO4	0	0.0
O1 - O6	6	6.5
Unknown	4	4.3
TOTAL	92	100.0

TABLE 2

RATE OF DENTAL SICK CALL IN TRAINING
EXERCISES AT FORT IRWIN, CA 1981

UNITS FROM INSTALLATIONS	SICK CALL	TROOPS SUPPORTED	DAYS OF EXERCISE	SICK CALL RATE (VISIT/1,000/YR)
A	77	2,345	43	279
B	84	2,600	54	218
C	21	2,800	20	137
TOTAL	182	7,745	117	234* WEIGHTED MEAN

* Weighted on the basis of each unit's proportion of the total number of sick call.

TABLE 3

FREQUENCY OF SICK CALL VISITS, BY THE CONDITIONS WHICH CAUSED THE
VISITS IN TRAINING EXERCISES AT FORT IRWIN, CA 1981

CONDITION	FREQUENCY	PERCENT
CARIES	75	41.2
THIRD MOLARS/PERICORONITIS	29	15.9
DEFECTIVE FILLING/FRACTURED TOOTH	20	11.0
GINGIVAL/PERIODONTAL PROBLEMS	17	9.3
TRAUMA	5	2.7
DEFECTIVE/BROKEN DENTURE/BRIDGE	1	0.5
NON SPECIFIC/POST OPERATIVE	35	19.2
TOTAL	182	100.0

TABLE 4

FREQUENCY OF TREATMENT RENDERED FOR CONDITIONS WHICH PRESENTED ON DENTAL
SICK CALL, IN TRAINING EXERCISES AT FORT IRWIN, CA 1981

TYPE TREATMENT Rendered	AS PRIMARY TREATMENT*		OF ALL TREATMENT**	
	FREQUENCY	%	FREQUENCY	%
EXTRACTION	38	20.9	39	15.2
TEMPORARY RESTORATION	33	18.1	41	15.9
PRESCRIPTION	28	15.4	91	35.4
ENDODONTIC	21	11.5	21	8.2
GINGIVAL/PERIODONTAL	13	7.1	13	5.0
PERMANENT RESTORATION	10	5.5	13	5.0
POSTOPERATIVE TREATMENT	9	4.9	9	3.5
DENTURE/BRIDGE REPAIR	2	1.1	2	0.8
OTHER TREATMENT	11	6.0	11	4.3
NO TREATMENT	17	9.3	17	6.6
TOTAL	182	100.0	257	100.0

* Primary treatment indicates that treatment which was the most definitive treatment rendered for the condition presenting at that appointment.

** All treatment indicates treatment which was rendered as the primary treatment plus other treatment which was rendered secondarily, e.g., prescription secondary to an extraction.

TABLE 5

DISPOSITION OF DENTAL SICK CALL PATIENTS AFTER TREATMENT
IN TRAINING EXERCISES AT FORT IRWIN, CA 1981

PATIENT DISPOSITION	FREQUENCY	PERCENT
Returned to Duty	126	69.2
Returned to Duty/with appointment to be seen in the field	27	14.8
Evacuate to DENTAC	22	12.1
Evacuate to Hospital	2	1.1
Evacuate from Fort Irwin	1	0.5
Unknown	4	2.2
TOTAL	182	100.0

TABLE 6

RANK AND SEX DISTRIBUTION OF SICK CALL GROUP AND CONTROL GROUP IN
DENTAL RECORD AUDIT, US ARMY P.D./FIELD SICK CALL STUDY, 1981

	FIELD SICK CALL GROUP		CONTROL GROUP (RANDOM SAMPLE OF NON-SICK CALL)	
	N	% OF SAMPLE	N	% OF SAMPLE
BY RANK:				
E1 - E3	48	52.2	52	53.6
E4 - E5	24	26.1	32	33.0
E6 - E7	10	10.9	5	5.2
E8 - E9	0	0.0	1	1.0
WO1 - WO4	0	0.0	0	0.0
O1 - O2	4	4.3	2	2.1
O3 - O4	2	2.2	3	3.1
O5 - O6	0	0.0	1	1.0
Unknown	4	4.3	1	1.0
BY SEX:				
Male	86	93.5	91	93.8
Female	6	6.5	6	6.2

TABLE 7

DENTAL CARE HISTORY OF TROOPS REPORTING ON SICK CALL (92), CONTROLS (97), AND THE TWO GROUPS COMBINED (189), US ARMY P.D./FIELD SICK CALL STUDY, 1981*

	SICK CALL		CONTROL		BOTH	
	NUMBER	%	NUMBER	%	NUMBER	%
Had exam at present duty station	69	75.0	74	76.3	143	75.7
Had treatment at present duty station	50	54.3	57	58.8	107	56.6
Last visit was for routine care	78	84.8	87	89.7	165	87.3
Last visit was for emergency care	9	9.8	6	6.2	15	7.9
Type of last visit						
Examination	43	46.7	34	35.1	77	40.7
Oral Hygiene	12	13.0	20	20.6	32	16.9
Restorative	18	19.6	24	24.7	42	22.2
Endodontic	2	2.2	3	3.1	5	2.6
Periodontic	1	1.1	2	2.1	3	1.6
Prosthodontic	2	2.2	3	3.1	5	2.6
Oral Surgery	7	7.6	7	7.2	14	7.4
Dental classification prior to exercise						
A	3	3.3	5	5.2	8	4.2
B	72	78.3	70	72.2	142	75.1
C	16	17.4	20	20.6	36	19.0
Treatment plan was needed in S.F. 603 (Dental Record)	52	56.5	56	57.7	108	57.1
Treatment plans indicated first priority need for:						
Examination	0	0.0	3	3.1	3	1.6
Oral Hygiene	36	39.1	41	42.3	77	40.7
Restorative	10	10.9	9	9.3	19	10.1
Endodontic	1	1.1	0	0.0	1	0.5
Prosthodontic	1	1.1	1	1.0	2	1.1
Oral Surgery	3	3.1	2	2.1	5	2.6

* No statistically significant difference was observed between sick call group and control group for any of the variables presented in this table.

TABLE 8

DENTAL CARE RECORDED IN DENTAL RECORD FOR ONE YEAR PRIOR TO EXERCISE FOR TROOPS WHO REPORTED ON SICK CALL (92), CONTROLS (97) AND THE TWO GROUPS COMBINED (189), US ARMY P.D./FIELD SICK CALL STUDY, 1981*

	SICK CALL		CONTROL		BOTH	
	No. of Appts	Appts per Person	No. of Appts	Appts per Person	No. of Appts	Appts per Person
Appts For:						
Examination	92	1.000	112	1.155	204	1.080
Oral Hygiene	40	0.435	52	0.536	92	0.487
Restorative	76	0.826	76	0.783	152	0.804
Endodontics	12	0.130	5	0.051	17	0.090
Periodontics	2	0.022	3	0.031	5	0.026
Prosthodontics	9	0.098	8	0.083	17	0.090
Oral Surgery	23	0.250	35	0.361	58	0.307
Failed/ Cancelled Appts	25	0.272	30	0.309	55	0.291

* No statistically significant difference was observed between sick call group and control group for any variables presented in this table.

TABLE 9

DENTAL CARE RECORDED IN DENTAL RECORD FOR ONE YEAR COMMENCING 24 MONTHS PRIOR TO EXERCISE FOR TROOPS WHO REPORTED ON SICK CALL (50)*, CONTROLS (64)*, AND THE TWO GROUPS COMBINED (114), US ARMY P.D./FIELD SICK CALL STUDY, 1981**

	SICK CALL		CONTROL		'BOTH'	
	No. of Appts	Appts per Person	No. of Appts	Appts per Person	No. of Appts	Appts per Person
Appts For:						
Examination	29	0.580	67	1.047	96	0.842
Oral Hygiene	10	0.200	25	0.391	35	0.307
Restorative	12	0.240	37	0.578	49	0.430
Endodontics	4	0.080	2	0.031	6	0.053
Periodontics	0	0.000	0	0.000	0	0.000
Prosthodontics	2	0.040	4	0.063	6	0.053
Oral Surgery	10	0.200	9	0.141	19	0.167
Failed/ Cancelled Appts	5	0.100	11	0.220	16	0.320

* The original size of the sick call group (92) and control group (97) was reduced by the number who were not eligible for dental care in this time period.

** No statistically significant difference was observed between sick call group and control group for any variables presented on this table.

TABLE 10

FREQUENCY AND PERCENT OF PARTICIPATION IN THE ARMY ORAL HEALTH MAINTENANCE
PROGRAM (AOHMP) BY SICK CALL GROUP (92) AND CONTROL GROUP (97),
US ARMY P.D./FIELD SICK CALL STUDY, 1981*

	SICK CALL GROUP		CONTROL GROUP	
	NUMBER	PERCENT	NUMBER	PERCENT
Last AOHMP requirements completed	27	29.3	44	45.4
Last AOHMP requirements not completed	55	59.8	49	50.5
Not eligible	10	10.9	4	4.1

* There is a statistically significant difference for the distribution of participants, non-participants, and not-eligibles between the sick call group and non-sick call group. (Chi-square = 6.860 with 2 degrees of freedom at significance = 0.0324.)

APPENDIX A'

FIELD SICK CALL DATA COLLECTION FORM

PLACE OF TREATMENT: FIELD

FORT IRWIN DENTAC **DAILY SICK CALL TREATMENT LOG**

DENTAL OFFICER

APPENDIX B

PREVENTIVE DENTISTRY EVALUATION STUDY
PAST DENTAL EXPERIENCE PROFILE

RECORD NUMBER _____

Card Column

- | | | |
|--|-----------------------------|-------|
| 1. INSTALLATION CODE | <input type="checkbox"/> | 1 |
| 2. SICK CALL EXPERIENCE 1 = YES, 2 = NO | <input type="checkbox"/> | 2 |
| 3. RANK: See Instructions | <input type="checkbox"/> | 3 |
| 4. SEX 1 = MALE, 2 = FEMALE | <input type="checkbox"/> | 4 |
| 5. HAS SOLDIER BEEN SEEN SINCE RECEPTION FOR: | | |
| EXAMINATION(S) 1 = YES, 2 = NO | <input type="checkbox"/> | 5 |
| TREATMENT 1 = YES, 2 = NO | <input type="checkbox"/> | 6 |
| 6. HAS SOLDIER BEEN SEEN AT PRESENT DUTY STATION FOR: | | |
| EXAMINATION(S) 1 = YES, 2 = NO | <input type="checkbox"/> | 7 |
| TREATMENT 1 = YES, 2 = NO | <input type="checkbox"/> | 8 |
| 7. MONTHS SINCE LAST DENTAL VISIT: | | |
| EXAMINATION | <input type="checkbox"/> | 9-10 |
| TREATMENT | <input type="checkbox"/> | 11-12 |
| 8. NATURE OF LAST VISIT ROUTINE = 1, EMERGENCY = 2 | <input type="checkbox"/> | 13 |
| 9. TYPE OF LAST VISIT (See Code) | <input type="checkbox"/> | 14 |
| 10. WAS LAST AOHMP REQUIREMENT COMPLETED 1 = YES, 2 = NO, 3 = NOT ELIG | <input type="checkbox"/> | 15 |
| 11. DENTAL CLASSIFICATION PRIOR TO TRAINING EXERCISE A = 1, B = 2, C = 3 | <input type="checkbox"/> | 16 |
| 12. IF CLASS B, IS A-TREATMENT PLAN OR-NEED FOR TREATMENT INDICATED IN SEC 16, SF 603: 1 = YES, 2 = NO | <input type="checkbox"/> | 17 |
| 13. IF YES, INDICATE TYPE OF CARE INDICATED BY PRIORITY: (See Code) | 1. <input type="checkbox"/> | 18 |
| | 2. <input type="checkbox"/> | 19 |
| | 3. <input type="checkbox"/> | 20 |
| | 4. <input type="checkbox"/> | 21 |

TREATMENT RECEIVED RECORD

PAST TWELVE MONTHS:

- | | | |
|---|---|-------|
| 14. NUMBER OF EXAMINATION APPTS | <input type="checkbox"/> | 22 |
| 15. NUMBER OF ORAL HYGIENE APPTS | <input type="checkbox"/> | 23 |
| 16. NUMBER OF RESTORATIVE APPTS | <input type="checkbox"/> <input type="checkbox"/> | 24-25 |
| 17. NUMBER OF ENDODONTIC APPTS | <input type="checkbox"/> | 26 |
| 18. NUMBER OF PERIODONTIC APPTS | <input type="checkbox"/> | 27 |
| 19. NUMBER OF PROSTHODONTIC APPTS | <input type="checkbox"/> | 28 |
| 20. NUMBER OF ORAL SURGERY APPTS | <input type="checkbox"/> <input type="checkbox"/> | 29-30 |
| 21. NUMBER OF FAILED/CANCELLED APPTS | <input type="checkbox"/> | 31 |
| 22. PRECEDING TWELVE MONTHS: NOT ELIGIBLE = 1 | <input type="checkbox"/> | 32 |
| 23. NUMBER OF EXAMINATION APPTS | <input type="checkbox"/> | 33 |
| 24. NUMBER OF ORAL HYGIENE APPTS | <input type="checkbox"/> | 34 |
| 25. NUMBER OF RESTORATIVE APPTS | <input type="checkbox"/> <input type="checkbox"/> | 35-36 |
| 26. NUMBER OF ENDODONTIC APPTS | <input type="checkbox"/> <input type="checkbox"/> | 37 |
| 27. NUMBER OF PERIODONTIC APPTS | <input type="checkbox"/> | 38 |
| 28. NUMBER OF PROSTHODONTIC APPTS | <input type="checkbox"/> | 39 |
| 29. NUMBER OF ORAL SURGERY APPTS | <input type="checkbox"/> <input type="checkbox"/> | 40-41 |
| 30. NUMBER OF FAILED/CANCELLED APPTS | <input type="checkbox"/> | 42 |

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